

Draft

"Statement of Findings"
for
IAG Site Characterization Activities in Floodplains

INTRODUCTION

On XXXXXXXX XX, 1992, the Department of Energy (DOE) published a "Notice of Involvement in Floodplains" regarding its intent to undertake site characterization activities in floodplains at its Rocky Flats Plant (RFP) north of Golden, CO. The site characterization involves sampling of soil, sediments, surface water, ground water, air, flora and fauna to establish the presence and identify the nature and extent of contaminants, if any. The site characterization activities covered in this document are those within a floodplain in operable units (OUs) 3 (Off-site Areas), 4 (Solar Evaporation Ponds) and 9 (Original Process Waste Lines).

PROJECT DESCRIPTION

The site characterization work that will take place in floodplains consists of the following

OU 3 is located on lands adjacent to the RFP site immediately to the east of the Plant's buffer zone. Vertical soil profile trenches, measuring approximately 9 feet long, 5 feet wide and 4 feet deep, will be dug by a backhoe. Exact locations of the trenches have not been determined, but six trenches are proposed in locations that could place them in a floodplain. Eleven samples will be collected from various depths in each trench. One of these trenches is typically dug and filled within a day. The soil removed from the trench will be used to backfill it. Because of the short duration and character of this activity, it is not expected to have any adverse impacts to floodplains.

Surficial soil samples will be collected in an area within approximately 12 miles of RFP. Surface soil scrapes are taken with a small, hand-held device which collects 2 to 3 tablespoons of soil from the top one-quarter inch of the ground. Twenty-five soil scrapes will be taken from each of 60 10-acre areas generally to the east of RFP. Virtually any of the soil scrapes has the potential to be taken from within a floodplain. Because of the non-invasive character of this activity, no adverse floodplain impacts are expected.

Sediment samples will be obtained from streams, ditches, ponds and reservoirs in OU 3. Sediment sampling involves single or repeated visits to sampling stations to collect up to a few pounds of sediments. Both new and existing sediment sampling stations will be used. A new sediment sampling station is established by driving a metal fence post into the ground to mark a site which can be returned to in the future. Some of the sediment sampling stations will be located on streams or ditches while others will be located on the shores or under the waters of ponds, lakes or reservoirs. Vertical sediment profile samples will be taken from reservoir bottoms by dropping a tube through the water into the sediment. The bottom of the tube closes and up to three feet of sediment can be withdrawn for analysis. Sediment grab samples will also be taken from reservoir bottoms, but include only the top 2 to 3 inches of sediment. By their nature, all sediment sampling stations and sample collection activities will be in floodplains. Because of the non-invasive character of this activity, it is not expected to have any adverse impacts to floodplains.

Surface water sampling will also be done. Surface water sampling involves single or repeated visits to sampling locations to gather up to a few quarts or gallons of water. Both new and existing surface water sampling stations will be used. A new surface water sampling station is established by driving a metal

fence post into the ground to mark a site which can be returned to in the future. Some of the surface water sampling stations are, or will be, located on streams or ditches while others will be located on the shores or waters of ponds, lakes or reservoirs. By their nature, virtually all surface water sampling stations and sample collection activities will be in floodplains but, because the sampling is non-invasive, it is not expected to have any adverse impacts to floodplains.

Four new ground water monitoring wells will be drilled. Two will be immediately below the dams of both Great Western Reservoir and Standley Lake. These locations are in the floodplains of Walnut and Big Dry Creeks respectively. In well drilling, the advancing drill bit produces cuttings which are shoveled into drums pending analysis for contaminants, storage, treatment and ultimate disposal. Wells are characteristically 6 inches in diameter and 15 to 60 feet deep, though some may be deeper. Once the well is in place, a casing is installed to ensure the integrity of the well and to enable the well to draw water from the intended depths. When drilling is completed, surface evidence of the activity is downed vegetation around the immediate site and a 6 inch pipe extending 2 to 3 feet above the ground. When they have served their purpose, the wells will be abandoned in accordance with RFP standard operating procedures (plugging and capping). Some new ground water sampling wells may be located in floodplains but, because of the very low impacts and short duration of the drilling activity, no adverse effects on floodplains are anticipated.

To collect water samples from ground water monitoring wells, a collection device is lowered into a well where it fills with water. The device is pulled to the surface and the water is poured into another container.

Site characterization work at OU 3 will include establishment and operation of air and meteorological monitoring stations. Three air sampling and meteorological monitoring activities will take place at OU 3. One will be installation of three new high-volume air samplers. Two of the samplers will be located at Standley Lake while the third will be at a site to be selected in a residential area near the Lake. An air sampler is a piece of equipment housed in a stainless steel box approximately 2 feet on a side. Installation of an air sampler involves pouring a concrete pad on which the air sampler is mounted and making provisions to bring electric power to the site. The concrete pads, together with the samplers, will be removed when the study is completed. One of the samplers will be located in, or near, the southwestern floodplain of Standley Lake but in an area unlikely to be inundated by anything other than a larger (50 or 100 year) storm event. Because of the non-invasive character of this activity, it is not expected to have any adverse floodplain impacts.

The second activity is installation of two new meteorological monitoring stations. Each of the stations consists of a 6-meter tower on a small concrete pad. The towers may be fenced if necessitated by the presence of livestock or other considerations. Each tower will hold instruments to measure meteorological characteristics and may be supported by guy wires. One of these stations will be located at a terrestrial site approximately a mile east of the eastern RFP boundary, south of Great Western Reservoir. The second meteorological tower will be located with one of the air samplers in, or near, the southwestern floodplain of Standley Lake, but in an area unlikely to be inundated by anything other than a larger (50 or 100 year) storm event. Because of the non-invasive character of the installation and operation of the meteorological towers, no adverse impacts to the floodplain are expected.

The third activity in the OU 3 air sampling program is use of small and medium-sized portable wind tunnels to characterize and measure the ability of winds at various speeds to move sediments on and from the exposed areas of the Standley Lake bed. The wind tunnel devices will be mounted on a small trailer and have an open-floored test section which is placed over the surface of the lake bed to be tested. Air will be drawn through the test section at controlled velocities. The air stream will pass through a duct fitted with a filter which will collect particulates raised from the lake bed by the wind. The particulate samples will be sent to a laboratory to identify their volume and constituents. Six tests will be conducted at each of three

sites in late summer when soil moisture is generally at its lowest level. Each of the tests will take approximately one day. One site will be on the bed of Standley Lake, the second on the bed of Great Western Reservoir, and the third on a yet-to-be-identified highland site (i.e., not on a lake bed) south of Great Western Reservoir. The first two sets of tests will necessarily take place within the floodplains of Standley Lake and Great Western Reservoir but, because of their nature and short duration, the tests are not expected to have any adverse floodplain impacts.

Samples of terrestrial and aquatic flora and fauna will be gathered in OU 3 using standard collection techniques, e.g., vegetative clipping, live animal trapping and field surveys. These activities will typically last a year. Flora and fauna sample collection will take place in floodplains but, because of the non-invasive character of this activity, no adverse floodplain impacts are anticipated.

At OU 4 there will be four types of field work in floodplains. The first is conduct of a radiological survey. This survey will consist of a surveyor taking one-minute readings with a gamma probe (a device for measuring gamma radiation) held at about waist height at each of the approximately 350 locations shown in Figure 10. The surveyor will also take readings of alpha radiation at the same locations. Alpha readings will be taken at eight locations on a 5 foot radius from the station with the alpha counter held 4 to 6 inches from the ground. Approximately 15 of the 350 sites are in the floodplain of Walnut Creek. Because of the non-invasive character of this activity, it is not expected to have any adverse floodplain impacts.

Approximately 35 surficial soil samples will be taken at OU 4. At each location, two 1 meter-square areas will be located 1 meter apart. Samples will be collected to a depth of one-inch with either a plug-type collector or a scoop. Three of the surficial soil sample sites are located in the Walnut Creek floodplain but, because of the non-invasive character of this activity, it is not expected to have any adverse floodplain impacts.

Borehole drilling is the third type of activity that will take place in the floodplain at OU 4. Approximately four boreholes will be drilled in the floodplain on the south side of Walnut Creek in the Solar Ponds area. Drilling boreholes involves the same procedures as drilling wells. A drill rig is driven to the site and drills the borehole, typically within a day. The advancing drill bit produces a core of soil and/or rock which is preserved for analysis, and drill cuttings which are shoveled into drums pending analysis for contaminants, storage, treatment and ultimate disposal. Boreholes are characteristically 6 inches in diameter and 15 to 60 feet deep, though some may be deeper. When drilling is completed, surface evidence of the activity is downed vegetation around the immediate site and a 6 inch pipe extending 2 to 3 feet above the ground. Some boreholes may be completed as wells by installation of a well casing and screen. When they have served their purpose, boreholes and wells will be abandoned in accordance with RFP standard operating procedures (plugging and capping). Some new boreholes may be located in floodplains but, because of the very low impacts of the drilling activity, no adverse floodplain effects are anticipated.

Finally, samples of flora and fauna will be taken at selected sites in OU 4, some in the floodplain. Because of the non-invasive character of this activity, it is not expected to have any adverse floodplain impacts.

Field work at OU 9 that will be in a floodplain is limited to flora and fauna sampling and possible excavation at the extreme eastern end of the OU in the headwaters of South Walnut Creek. Flora and fauna sampling activities will be generally the same as those undertaken in OU 4 and, similarly, will have no adverse impacts to the floodplain.

Certain portions of OU 9 extend east of the Protected Area (PA), the high security area of RFP, and may enter the floodplain of Walnut Creek or South Walnut Creek. It is not clear from existing documents if the pipeline system in this area has been removed, so field work may be undertaken along the length of the two easternmost lines. One of these lines is believed to terminate near South Walnut Creek between the

two security fences and may be in the floodplain in that area. The second line may extend along the top of a ridge for a distance of approximately 2,000-2,500 feet east of the PA fence, possibly as far as Pond B-2. If it still exists, a portion of this line could also be in a floodplain. Field work along both lines would consist of excavations by backhoe and/or soil samples on 200-foot centers.

LIST OF ALTERNATIVES CONSIDERED

No Action

CONFORMANCE WITH APPLICABLE LOCAL FLOODPLAIN REGULATIONS

The activities are consistent with the guidelines provided by Section 42 of the Jefferson County, Colorado, zoning regulations. The State of Colorado defers regulation of floodplains to local governments.

MITIGATION MEASURES

Because of the negligible impacts of the proposed action to floodplains, few steps are needed to mitigate potential harm. Where a drilling site can be relocated out of a floodplain while still maintaining the integrity of the sampling program, the drilling site will be relocated. Travel within floodplains will be restricted to established roads and tracks where they are available.